

In the Claims:

1-15. (canceled)

16. (new) A process of testing functional combinational logic in an integrated circuit having distributor circuits, collector circuits, a certain number of scan paths connected between the distributor circuits and the collector circuits, each scan path including functional registers that can be configured into scan registers, and a controller controlling operation of the distributor circuits, the collector circuits, and the scan paths, comprising:

- A. receiving a start test signal;
- B. configuring the functional circuitry into a test mode;
- C. capturing response data outputs from all parallel scan paths into the collector circuits;
- D. shifting data in the distributor circuits and collector circuits the certain number of times to load stimulus data into the distributor circuits and unload response data from the collector circuits;
- E. shifting data in the scan paths one time to load the scan paths with one bit of test stimulus data from the distributor circuits;
- F. testing if the scan paths have filled with the test stimulus pattern, including:
 - i. repeating the process from step C if they have not filled with the test stimulus pattern; or
 - ii. proceeding with the next step if they have filled with the test stimulus pattern; and

Application No. 10/695,241

G. testing for receipt of an end of test signal, including:

i. if the end of test signal has not been received, then capturing response pattern data from the combinational logic into the scan paths and repeating the process from step C; or

ii. if the end of test signal has been received, then configuring the functional circuitry into a normal mode.

17. (new) The process of claim 16 including executing the process steps with the controller.

18. (new) The process of claim 16 including placing the controller in the start test state waiting for a start test signal.

19. (new) The process of claim 16 including returning the controller to a start test state until another start test signal occurs after configuring the functional circuitry into a normal mode.

20. (new) The process of claim 16 including receiving the start test signal in the controller.

21. (new) The process of claim 16 including providing control signals from the controller to the distributor circuits, the collector circuits, and the scan paths.